AMENDMENTS

A. IN THE CLAIMS:

Please enter the following rewritten claims:

10. (Currently Amended) A method of selecting a compound that interferes with binding of a synaptic activation protein to a cellular binding protein in the mammalian central nervous system, comprising:

adding a test compound to a reaction mixture containing (i) a synaptic activation protein having at least 70% sequence identity to a polypeptide having the sequence SEQ ID NO:2, (ii) a binding protein to which the synaptic activation protein binds, and (iii) means for detecting binding between the synaptic activation protein and the binding protein; measuring binding between the synaptic activation protein and the binding protein; and

selecting the compound if the measured binding is greater than or less than binding measured in the absence of the test compound.

11. (Currently Amended) The method of claim 10, wherein the binding protein is a metabotropic glutamate receptor (mGluR).

12. (Currently Amended) The method of claim 27, wherein the binding protein comprises a mGluR and the measuring the cellular response to binding between the synaptic binding protein and the binding protein comprises measuring phosphoinositidase C (PI-PLC) activity in the cells.

Please enter the following new claims:

--13. (New) The method of claim 10, wherein the binding protein is a metabotropic glutamate receptor comprising a sequence selected from the group consisting of SSSL and SSTL.

14. (New) The method of claim 11, wherein the mGluR is selected from mGluR5 and mGluR1α.

15. (New) The method of claim 10, wherein the synaptic activation protein is a Homer protein.

16. (New) The method of claim 10, wherein the synaptic activation protein is in solid phase.

17. (New) The method of claim 16, wherein the solid phase is a microtiter plate.

18. (New) The method of claim 10, wherein the means for detecting binding is a glutathione-S-transferase (GST)-pulldown.

19. (New) The method of claim 10, wherein the means for detecting binding is coimmunoprecipitation.

20. (New) The method of claim 10, wherein the measuring binding comprises labeling the binding protein, wherein the labeling is direct labeling or is subsequent addition of a labeled, binding protein-specific reagent.

21. (New) The method of claim 20, wherein the binding protein-specific reagent is an antibody.

22. (New) The method of claim 20, wherein the labeling comprises use of an enzyme capable of generating a signal, use of a radiolabeled reagent, use of a fluorescent dye, or use of gold or biotin.

23. (New) The method of claim 22, wherein the radiolabeled reagent is labeled with 125I.

24. (New) A pharmaceutical composition containing a compound identified by the method of claim 10.

25. (New) A method of treating a condition comprising administration of an effective amount of a compound identified by the method of claim 10, wherein the condition is characterized by an altered neuronal and/or synaptic activity.

26. (New) The method of claim 25, wherein the condition comprises epilepsy, abnormal brain development, neural injury, trauma or chemical addiction.

27. (New) A method of identifying a compound that modulates a cellular response, comprising:

adding a test compound to a cell containing: (i) a synaptic activation protein having at least 70% sequence identity to a polypeptide having the sequence SEQ ID NO:2, (ii) a binding protein to which the synaptic activation protein binds, and (iii) means for detecting cellular response to binding between the synaptic activation protein and the binding protein;

measuring the cellular response to binding between the synaptic activation protein and the binding protein; and

comparing the cellular response in the presence and absence of the test compound, wherein a change in the cellular expression in the presence of the compound as compared to the absence of the compound is indicative of a compound that modulates a cellular response.

28. (New) The method of claim 27, wherein the cell comprises a bacterial, yeast, insect or mammalian cell.

29. (New) The method of claim 27, wherein the synaptic activation protein is expressed by a gene endogenous to the cell.

30. (New) The method of claim 27, wherein the synaptic activation protein is expressed by a gene construct transfected into the cell.

31. (New) The method of claim 27, wherein the binding protein is expressed by a gene endogenous to the cell.

32. (New) The method of claim 27, wherein the binding protein is expressed by a gene construct transfected into the cell.

33. (New) The method of claim 27, wherein the measuring the cellular response to binding between the proteins comprises a two-hybrid protein interaction assay.

34. (New) The method of claim 27, wherein the measuring the cellular response to binding between the proteins comprises using a reporter construct.

35. (New) The method of claim 34, wherein the reporter construct comprises a vector comprising a polynucleotide encoding an isolated synaptic activation protein having at least 70% sequence identity to a polypeptide having the sequence SEQ ID NO:2.

36. (New) The method of claim 35, wherein the reporter construct further comprises at least one regulatory sequence.

37. (New) The method of claim 27, wherein the measuring the cellular response to binding between the proteins comprises using a mGluR construct comprising a binding protein, wherein the binding protein comprises mGluR.

38. (New) The method of claim 37, wherein the mGluR comprises a sequence selected from the group consisting of SSSL and SSTL.

39. (New) The method of claim 37, wherein the mGluR is selected from mGluR5 and mGluR1α.

40. (New) The method of claim 27, wherein the cellular response comprises an increase or decrease in calcium mobilization or PI-PLC activity.

41. (New) A pharmaceutical composition containing a compound identified by the method of claim 27.

42. (New) A method of treating a condition comprising administration of an effective amount of a compound identified by the method of claim 27, wherein the condition is characterized by an altered neuronal and/or synaptic activity.

43. (New) The method of claim 42, wherein the condition comprises epilepsy, abnormal brain development, neural injury, trauma or chemical addiction. --